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ABSTRACT

This secondary analysis of data, collected between 1987 and 1992 in a study of an elite group of academic scientists who had received prestigious postdoctoral fellowships, sought to assess differences in reported experiences of structural obstacles by cohort. The sample consisted of 23 women: 10 who had earned doctorates before 1970, 7 who had earned their doctorates between 1970 and 1979, and 6 who had earned doctorates in 1980 or after. Secondary analysis of the original questionnaire and interview data suggested differences and similarities among the three cohorts on three dimensions--perceived obstacles, perceived supports, and the compatibility of marriage, family, and career. Women in the earlier cohorts mentioned encountering structural obstacles more frequently than did women in later cohorts, and they almost exclusively pointed to a father or other male as being influential in their career choice. A majority of married women reported that marriage had a positive impact on their careers. The report concludes that birth cohort, rather than doctoral cohort, may be a more valid indicator of differences in attitudes and experiences related to compatibility of family and career. (Contains 10 references.) (CH)

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Continuity and Change in the Experiences of Three Doctoral Cohorts of Faculty Women

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This paper was presented at the annual meeting of the Association for the Study of Higher Education held in San Antonio, Texas, November 18-21, 1999. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

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ABSTRACT

A secondary analysis of data from 23 faculty women who had received postdoctoral fellowships was performed to assess differences in their reported experiences by doctoral cohort (before 1970, 1970-1979, 1980 and later). Women who earned doctorates before 1970 reported encountering more structural obstacles than women in the later cohorts. No differences were found in terms of colleagues' attitudes about the incompatibility of family and a career. Such concerns permeated the comments of women in all three cohorts. Birth cohort may be a more meaningful unit of analysis than doctoral cohort for faculty women.

**Research paper presented at the 1999 national conference of the Association for the Study of Higher Education (ASHE) in San Antonio, Texas.

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Continuity and Change in the Experiences of Three Doctoral Cohorts of Faculty Women

This paper describes findings from a secondary analysis I conducted of the Project Access study by Drs. Gerhard Sonnert and Gerald Holton which is now and archived at the Henry A. Murray Research Center at Harvard University.[1] Funded by The National Science Foundation (NSF), Project Access followed up a sample of recipients of prestigious postdoctoral fellowships. A "deficit model" (women are treated differently than men) and a "difference model" (women act differently than men) served as the conceptual foundation for the analysis of the careers of men and women scientists (Sonnert & Holton, 1995).

This paper is intended to provoke discussion and to make suggestions for future research. I want to share some insights I gained from doing a secondary analysis of an archived data set in a context of an overtly feminist research center. It is not my intent to try to publish the paper.

Motivation for the Research

My interest in the Project Access data lay not in pursuing the original conceptual model, but in examining cohort differences in the experiences reported by women participants who entered academic careers. Cohort effects examine the impact of the social, political, and intellectual climate of a given historical period on individuals' attitudes and behaviors, rather than the effects of aging or maturation. Members of a doctoral cohort share exposure

influence the labor market, geographic mobility, and availability of jobs appropriate to skills and training (Stephan & Levin, 1992). For academics, the year of earning a doctorate also marks a distinct state of knowledge and technology at the time they were trained (Stephan & Levin, 1992). This has long-term effects on career productivity, particularly in academic fields where knowledge changes rapidly (Stephan & Levin, 1992).

With the dramatic growth in the number of white women in the paid labor force since the 1960s, the social and historical context may have played an unusually powerful role in shaping the careers of certain doctoral cohorts of women. Acknowledging the dramatic changes by cohort, Helen Astin and Carole Leland organized their study of women leaders, Women of Influence, Women of Vision (1991) by generation. The legacy of feminism and the women's movement, and the growth in opportunity for employment that followed key labor legislation, including Title IX and affirmative action, in the 1970s are some of the factors that contributed to the growing presence of women in the paid labor force. Members of the baby boom generation (born between 1946 and 1964) were the first generation where the majority of women were simultaneously involved in marriage, parenthood, and employment (Mc Laughlin et al., 1988). Daughters of the baby boom generation are even more likely than their mothers to expect an egalitarian relationship with a spouse and to combine a family life and career (Mc Laughlin et al., 1988).

Purpose of the Study

During the summer of 1998, I spent six weeks in Cambridge, Massachusetts studying the Project Access data in collaboration with the coauthor. My study was designed to explore the hypothesis of cohort differences in the experiences of faculty women. This is an hypothesis that emerged during the research project that I conducted between 1992 and 1998 that involved one-on-one interviews with more than 50 highly productive, women scholarly writers (Creamer, 1995, 1999). Specifically, my purpose was to examine differences in attitudes among faculty women by doctoral cohort about the compatibility of work and family in the Project Access data.

Research Method

Conducted between 1987 and 1992, Project Access was an NSF funded research project to analyze the careers of an especially elite group of academic scientists who had been the recipients of a prestigious postdoctoral fellowship from the National Science Foundation (NSF), the National Research Council (NRC), or the Bunting Institute of Radcliffe College between 1952 and 1985. These included faculty in the natural and physical sciences, as well as smaller numbers in the social sciences. The project provided a unique opportunity to study the perceptions of the relatively small group of women who began careers as an academic scientists in the 1960s and 1970s.

Project Access consisted of an extensive questionnaire distributed to 804 scholars (509 men; 191 women) and a face-to-face interview with a sub-sample of 108 men and 92 women, matched by current position, academic age, and

academic field. Minority men or women are virtually absent from the sample. The mean year of birth of the survey respondents was 1946. The mean year of receiving a doctorate was 1975. Fifty-eight percent (57.6% of the men and 58.3% of the women) of the interview sample were employed in colleges or universities. The interviews generally lasted from two to three hours and covered a broad range of questions dealing with the experiences during graduate school and the postdoctoral fellowship, career obstacles, support mechanisms, and impact of marital status on career. Verbatim transcripts, each generally ranging between seventy to ninety pages (single-spaced) in length, were completed as part of the original research project.

Secondary analysis. In this paper, I report only the results obtained from a subsample of 23 women who had entered academic careers. I examined responses to selected interview questions for each member the subsample, as well as the entire verbatim transcript. My focus was on three areas: perceived obstacles, supports, and perceptions of the compatibility of marriage, family, and career.

Although I drew a comparable subsample, I excluded men from the analysis reported here because there were no comparable changes in men's work force participation during the time frame studied. The subsample includes 10 women who had earned a doctorate before 1970 (cohort 1), 7 women who had earned a doctorate between 1970 and 1979 (cohort 2), and 6 women who earned a doctorate in 1980 or after (cohort 3). Eight of the

women are in the biological sciences, 5 in the social sciences, and 10 in the physical sciences, math, and engineering.

A higher percentage of the women in the original interview sample (86.8%) had been married at some point in their lives than in my sub sample (78%), but both are considerably higher rates than has been historically true of faculty women in general. Ferber and Huber (1979) reported, for example, that 51% of women Ph.D.'s in the 1958-1963 doctoral cohort and 57% of those in the 1961 to 1971 cohort were married. Although the reason is not clear, the unusually high rate of marriage among the women is consistent with Ferber and Huber's (1979) finding that women in nontraditional fields, such as the physical and natural sciences, were significantly more likely to be married than women in fields where women were better represented (Ferber & Huber, 1979). The majority of women in the interview sample had children (70.2%).

The team of researchers for Project Access generated a coding scheme to quantify the open-ended interview responses, including for questions that dealt specifically with the topic of the compatibility of a scientific career, marriage, and family. Although it was my original intent to reanalyze only selected items on the questionnaire, this did not prove meaningful. The participant's comments about marriage and family wove as a subtext throughout replies to many questions. It was my sense that understanding their attitudes toward the compatibility of a scientific career and marriage and family could only be accurately captured by reading many parts of entire transcript, rather than by selectively reading isolated questions. This, in my

view, is the major methodological lesson from this secondary analysis: The relevant material to important issues may be distributed over the whole narrative of an interview, rather than being concentrated in the response to the question(s) that directly addresses it.

Findings

Secondary analysis of the questionnaire and interview data from Project Access suggest some differences and some similarities among three doctoral cohorts of academic women on the three dimensions of perceived obstacles, supports, and perceptions of the compatibility of marriage, family, and career. These are summarized briefly below.

Obstacles. Women in the earlier cohorts mentioned encountering structural obstacles much more frequently than did women in the more recent doctoral cohorts. Structural obstacles include policies and practices that overtly prohibited women from certain professional activities. Examples included women who were required to withdraw from graduate school or lost a scholarship or fellowship upon marriage. More subtle examples include exclusion from certain activities considered to be central to gaining essential job-related skills, such as the opportunity to do "bench work" among the biological and physical scientists, or to do research in the field among some geologists or anthropologists. By contrast, it was not uncommon for women in the more recent doctoral cohorts to observe that they felt they had been advantaged, rather than disadvantaged, by their gender.

Supports. Women in the earlier cohorts almost exclusively pointed to a father or male high school teacher, college professor, mentor, or relative as being influential to their choice of a career in science. The significance seemed largely to be described in terms of being taken seriously as an intellect. Women in more recent cohorts also mentioned other women who had been influential to their careers. Part of the absence of references to female mentors by women in the earlier doctoral cohorts is undoubtedly related to the fact that participants where almost all in nontraditional fields where they had little access to female role models or colleagues.

Marriage, family, and career. The majority of married women reported that marriage had a positive impact on their careers. This is consistent with the findings reported by Clark and Corcoran (1986). It is also consistent with the observation that women in earlier cohorts were grateful to have a husband who simply "allowed" them to pursue a challenging career.

Many of the faculty women in all of the doctoral cohorts expressed concern that their family responsibilities were perceived by *others* to interfere with their ability to be fully committed to a demanding career. With some notable exceptions, the participants seemed to indicate that while they did not perceive family responsibilities interfered with their work, they interpreted the comments and actions of their colleagues to embody a contradictory view. This illustrates the observation by Mc Laughlin et al, (1988) that changes in general attitudes about women and work often did not keep pace with the changing patterns of women's behavior.

Women in the earlier cohorts, particularly single women, seemed very aware of the advantages marriage afforded men who were not in dual career marriages. For example, participants described male colleagues whose spouse contributed what I would call invisible labor by doing such things as typing lecture notes and papers. While frequently describing a spouse as being supportive, none of the women participants reported receiving the advantages of a comparable, direct contribution to productivity.

Conclusions

Analysis of responses to items on the questionnaire revealed too few statistically significant differences among women by doctoral cohort to pursue further. Among faculty, doctoral cohort may be a less meaningful unit of analysis for women than it is for men. Part of the reason for this may be that faculty women's career trajectories have been more heterogeneous than have been men's. Historically, women's careers have being much more likely to be marked by interruptions and periods of underemployment and nonemployment (Cole & Singer, 1991). It is my conjecture that rather than doctoral cohort, birth cohort may be a more valid indicator of differences in attitudes and experiences related to compatibility of family and a career. To speculate further, birth cohort may have a crucial influence on women's socialization and attitudes, whereas doctoral cohort may be a more accurate indicator of structural influences on women's careers, such as labor market fluctuations and employment regulations. Differences in the faculty cultures of different academic fields are also likely to influence attitudes about the

compatibility of family and careers for women, particularly in fields where there are few women scientists.

A second observation that came to me during my secondary analysis of the Project Access data was about certain contradictions about how women described and identified experiences as discrimination. In the large interview sample, 73% of the women answered a direct question about whether they had experienced discrimination in the affirmative. The secondary analysis I conducted suggests this number may be even higher if one looks at the comments women made in some items in the questionnaire, as well as across a number of questions during the interview.

Women who completed doctorates before 1970 were particularly likely to describe experiences of what I considered to be overt discrimination while simultaneously refusing to label it as such. This is a contradiction that I find fascinating and would be interested to hear comments from the audience about. Along similar lines, in response to an item on the questionnaire, only a few women identified themselves as feminists, but many recognized that the women's movement had enhanced the professional opportunities available to them. I think this ambivalence about labeling an experience as discrimination is related to the psychological mechanism people deploy to reconstruct painful experiences, as well as a to women's discomfort with being labeled as a victim. Women's ability to identify an experience as discrimination also may be associated with their stage of feminist consciousness. It is not until the second stage of the development of feminist

consciousness, the stage Downing and Roush (1985) call revelation, do women begin to question traditional gender roles and where discrimination is recognized.

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[1] The Murray Research Center is the nation's largest social science data archive on human development across the lifespan. The contents of data bases archived there can be searched through the Center's web pages: http://www.radcliffe.edu/murray/index.html